

PURCHASE DESCRIPTION

LIGHTWAVE SIGNAL ANALYZER

AN7AB-A

- 1.0 GENERAL This procurement requires a lightwave signal analyzer consisting of a high-performance microwave spectrum analyzer and a sensitive wideband optical receiver for measuring intensity modulation of a fiber optic signal in the 1200 to 1600 nm range.
- 2.0 CLASSIFICATION The optical analyzer described herein shall meet the requirements of MIL-T-28800( ), Type III, Class 5, Style E, Color R for the Navy shipboard, submarine, and shore applications with the following exceptions:
- a. The Electromagnetic Interference requirements of MIL-T-28800( ) are limited to CE01, CE03, CS01, CS02 (0.05 to 100 MHz), CS06, RE01 (back panel search excluded), RE02 (14 kHz to 10 GHz), and RS03.
- 3.0 OPERATIONAL REQUIREMENTS The equipment shall be capable of performing optical signal analysis within the parameters and accuracies specified herein.
- 3.1 Optical Signal
- 3.1.1 Wavelength Range: At least 1200-1600 nm
- 3.1.2 Connector: Optical type ST
- 3.1.3 Return Loss: > 25 dB
- 3.1.4 Maximum input power
- 3.1.4.1 Average: < 15 dBm
- 3.1.4.2 Modulated: < 15 dBm
- 3.1.5 Average power accuracy:  $\pm 1.0$  dB
- 3.1.6 Displayed Average Optical Noise Level:
- |                   |                       |
|-------------------|-----------------------|
| Less than -50 dBm | [10 Hz resolution BW] |
| Less than -55 dBm | [100 kHz - 1 MHz]     |
| Less than -60 dBm | [1 MHz - 10 MHz]      |
| Less than -65 dBm | [10 - 100 MHz]        |
|                   | [100 - 2900 MHz]      |
- 3.1.7 Sensitivity: Less than -60 dBm

3.2 Modulated Signal

3.2.1 Frequency Range: 100 kHz to 2900 MHz

3.2.2 Span: 1 Hz to 2900 MHz plus 0 Hz

3.2.3 Resolution Bandwidth: 10 Hz to 300 kHz

3.2.4 Amplitude Range (dBm): -120 to +30

3.2.4.1 Residual Response: < -100 dBm [0 atten; no signal input]

3.2.5 Sweep Time: At least 20 ms to 100 sec

4.0 GENERAL REQUIREMENTS

4.1 Power: 115/230 Vac  $\pm 10\%$  single phase, 50,60 or 400 Hz, 400 w maximum

4.2 Dimensions: 399 H x 426 W x 526 D mm

4.3 Weight: Less than 27.3 kg (60 lb)

4.4 Calibration Interval: The calibration interval shall be 12 months minimum. The equipment shall be within all accuracy requirements specified herein, with a 72% or greater confidence factor following a calibration interval of 12 months.